Florida Building Code Edition 2010
High Velocity Hurricane Zone Uniform Permit Application Form

Section A (General Information)

Master Permit No. _____   Process No. _____

Contractor's Name: Victory Engineers and G C LLC

Job Address 1935 NE 11 ct 33179 , Miami FL

ROOF CATEGORY

☐ Low Slope   ☐ Mechanically Fastened Tile   ☐ Mortar/Adhesive Set Tile
☑ Asphaltic   ☐ Metal Panel/Shingles   ☐ Wood Shingles/Shakes
  Shingles

☐ Prescriptive BUR-RAS 150

ROOF TYPE

☐ New Roof   ☑ Reroofing   ☐ Recovering   ☐ Repair   ☐ Maintenance

ROOF SYSTEM INFORMATION

Low Slope Roof Area (SF)   Steep Sloped Roof Area (SF)   Total (SF)
                                                              1800
_____   _____   _____

SECTION B (Roof Plan)

Sketch Roof Plan: Ilustrate all levels and sections, roof drains, scuppers, overflow scuppers and overflow drains. Include dimensions of sections and levels, clearly identify dimensions of elevated pressure zones and location of parapets.
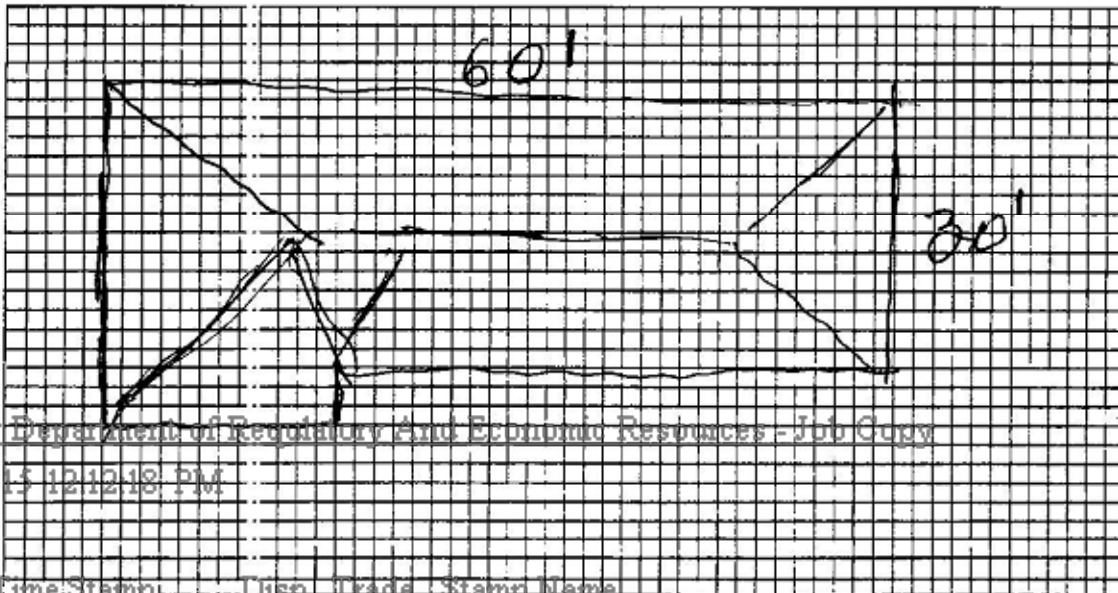
Examiner   Date Time Stamp   Disp. Trade Stamp Name

Boris Sursky 2/3/2015 1:50:58 PM   A   ROOF Approved

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Section D (Steep Sloped Roof System)

Roof System Manufacturer: _Royal Sol._

Product Approval Number: ~~11-0913.10~~ **12-1127.03**

Minimum Design Wind Pressures, If Applicable (From RAS 127 or Calculations):

P1: _-49.2_ P2: _-82.6_ P3: _-124.3_

Maximum Design Pressure
Product Approval Specific System: _____

Method of Tile Attachment: _____

Steep Sloped System Description

Deck Type: _5/8 plywood_

Roof Slope: _5_ : 12

Type Underlayment: _30 lb, Asphalt paper_

Insulation: _N/A_

Fire Barrier: _N/A_

Ridge Ventilation? _N/A_

Fastener Type & Spacing: _1¼ R-S nails_

Adhesive Type: _N/A_

Type Cap Sheet: _N/A_

Mean Roof Height: _20_

Roof Covering: _Royal Sol._

Type & Size Drips Edge: _Alum. 26 gpoisl_

ROOFING APPLICATION STANDARD (RAS) No. 127

PROCEDURE FOR DETERMINING THE MOMENT OF RESISTANCE AND MINIMUM CHARACTERISTIC RESISTANCE LOAD TO INSTALL A TILE SYSTEM ON A BUILDING OF A SPECIFIED ROOF SLOPE AND HEIGHT

1. **Scope**

   This standard covers the procedure for determining the Moment of Resistance (M_r) and Minimum Characteristic Resistance Load (F') to install a tile system on buildings of a specified roof slope and height. Compliance with the requirements and procedures herein specified, where the pressures (P_{asd}) have been determined based on Table 1 or Table 2 of this standard, as applicable, do not require additional signed and sealed engineering design calculation. All other calculations must be prepared, signed and sealed by a professional engineer or registered architect. Table 1 is applicable to a wind speed of 175 mph, risk category II buildings, and exposure category C. Table 2 is applicable to a wind speed of 175 mph, risk category II buildings, and exposure category D.

2. **How to determine the Moment Resistance (M_r) (Moment Based Systems)**

   2.1 Determine the minimum design wind pressures for the field, perimeter and corner areas ($P_{asd}1$, $P_{asd}2$ and $P_{asd}3$, respectively) using the values given in Table 1 or Table 2, as applicable, or those obtained by engineering analysis prepared, signed and sealed by a professional engineer or registered architect based on ASCE 7.

   2.2 Locate the aerodynamic multiplier (λ) in tile Product Approval.

   2.3 Determine the restoring moment due to gravity (M_g) per Product Approval.

   2.4 Determine the attachment resistance (M_f) per Product Approval.

   2.5 Determine the Moment of Resistance (M_r) per following formula:
   $$M_r = (P_{asd} \times \lambda) - M_g$$

   2.6 Compare the values for M_r with the values for M_f noted in the Product Approval. If the M_f values are greater than or equal to the M_r values, for each area of the roof [i.e., field $P_{asd}(1)$, perimeter $P_{asd}(2)$ and corner $P_{asd}(3)$ areas], then the tile attachment method is acceptable.

3. **How to determine the Minimum Characteristic Resistance Load (F') (Uplift Based System)**

   3.1 Determine the minimum design pressures for the field, perimeter and corner areas [$P_{asd}(1)$, $P_{asd}(2)$ and $P_{asd}(3)$, respectively] using the values given in Table 1 or Table 2, as applicable, or those obtained by engineering analysis prepared, signed and sealed by a professional engineer or registered architect based on the criteria set forth in ASCE 7.

   3.2 Determine the angle (θ) of roof slope, from Table 1 or Table 2, as applicable.

   3.3 Determine the length (l), width (w) and average tile weight (W) of tile, per Product Approval.

   3.4 Determine the required uplift resistance (F_r) per following formula:
   $$F_r = [(P_{asd} \times l \times w) - W] \times \cos \theta$$

   3.5 Compare the values for F_r with the values for F' noted in the Product Approval. If the F' values are greater than or equal to the F_r values, for each area of roof [i.e., field $P_{asd}(1)$ perimeter ($P_{asd}(2)$ and corner $P_{asd}(3)$ areas], then the tile attachment method is acceptable.

TABLE 1 — RISK CATEGORY II EXPOSURE CATEGORY "C"[1]

MINIMUM DESIGN WIND UPLIFT PRESSURES IN PSF FOR FIELD [P$_{asd}$(1)], PERIMETER [P$_{asd}$(2)] AND CORNER [P$_{asd}$(3)] AREAS OF ROOFS FOR EXPOSURE C BUILDINGS WITH A ROOF MEAN HEIGHT AS SPECIFIED[3]

ROOF SLOPE	> 2:12 to ≤ 6:12			> 6:12 to ≤12:12	
Roof mean height	P$_{asd}$(1)	P$_{asd}$(2)	P$_{asd}$(3)[2]	P$_{asd}$(1)	P$_{asd}$(2) & P$_{asd}$(3)
≤ 20'	-39.1	-68.1	-100.7	-42.8	-50.0
>20' to ≤ 25'	-40.9	-71.3	-105.4	-44.8	-52.3
>25' to ≤ 30'	-42.4	-73.9	-109.3	-46.4	-54.3
>30' to ≤ 35'	-43.9	-76.6	-113.2	-48.1	-56.2
>35' to ≤ 40'	-45.1	-78.7	-116.3	-49.4	-57.8

[1] Calculated in accordance with ASCE.

[2] For Hip Roofs with slope ≤ 5.5:12, P$_{asd}$(3) shall be treated as P$_{asd}$(2).

[3] P$_{asd}$ = 0.6P$_{ult}$

TABLE 2 — RISK CATEGORY II EXPOSURE CATEGORY "D"[1]

MINIMUM DESIGN WIND UPLIFT PRESSURES IN PSF FOR FIELD [P$_{asd}$(1)], PERIMETER [P$_{asd}$(2)] AND CORNER [P$_{asd}$(3)] AREAS OF ROOFS FOR EXPOSURE D BUILDINGS WITH A ROOF MEAN HEIGHT AS SPECIFIED[3]

ROOF SLOPE	> 2:12 to ≤ 6:12			> 6:12 to ≤12:12	
Roof mean height	P$_{asd}$(1)	P$_{asd}$(2)	P$_{asd}$(3)[2]	P$_{asd}$(1)	P$_{asd}$(2) & P$_{asd}$(3)
≤ 20'	-47.0	-81.9	-121.0	-51.4	-60.1
>20' to ≤ 25'	-48.8	-85.0	-125.7	-53.4	-62.4
>25' to ≤ 30'	-50.3	-87.7	-129.6	-55.0	-64.4
>30' to ≤ 35'	-51.5	-89.9	-132.7	-56.4	-65.9
>35' to ≤ 40'	-52.7	-91.9	-135.8	-57.7	-67.9

[1] Calculated in accordance with ASCE 7.

[2] For Hip Roofs with slope ≤ 5.5:12, P$_{asd}$(3) shall be treated as P$_{asd}$(2).

[3] P$_{asd}$ = 0.6P$_{ult}$

ROOFING APPLICATION STANDARD (RAS) No. 128

STANDARD PROCEDURE FOR DETERMINING APPLICABLE WIND DESIGN PRESSURES FOR LOW SLOPE ROOF

1. Scope

1.1 This roofing application standard has been developed to provide a responsive method of complying with the requirements of Chapters 15 & 16 (High-Velocity Hurricane Zones) of the *Florida Building Code, Building*. Compliance with the requirements and procedures herein specified, where the pressures (P_{asd}) have been determined based on Table 1 or 2, of this standard, as applicable, do not require additional signed and sealed engineering design calculations. All other calculations must be prepared, signed and sealed by a professional engineer or registered architect.

2. Definitions

2.1 For definitions of terms used in this application standard, refer to ASTM D 1079 and the *Florida Building Code, Building*.

3. Applicability

3.1 This application standard applies to:
a. exposure C and D category buildings; and
b. building heights of less than or equal to 40 feet; and
c. roof incline (pitch) is not greater than $1/2$ in.:12 in.
d. risk category II buildings

3.2 Using Table 1 or 2 below, as applicable, determine the minimum design pressure for each respective roof area, which corresponds to the applicable roof height range.

3.3 Referencing the selected Roof Assembly Product Approval, check that the listed maximum allowable design pressure for the particular approved system meets or exceeds those listed in Table 1 or Table 2 above, as applicable.

TABLE 1 — RISK CATEGORY II EXPOSURE CATEGORY "C"[1, 2]
MINIMUM DESIGN WIND UPLIFT PRESSURES, IN PSF FOR FIELD [$P_{asd}(1)$], PERIMETER [$P_{asd}(2)$] AND CORNER [$P_{asd}(3)$] AREAS OF ROOFS FOR EXPOSURE "C" BUILDINGS

Roof mean height (below)	$P_{asd}(1)$ (Field)	$P_{asd}(2)$ (Perimeter)	$P_{asd}(3)$ (Corners)
20	-42.8	-71.7	-108.0
25	-44.8	-75.1	-113.0
30	-46.4	-77.8	-117.2
35	-48.1	-80.6	-121.3
40	-49.4	-82.9	-124.7

[1] Calculated in accordance with ASCE 7.
[2] $P_{asd} = 0.6P_{ult}$

TABLE 2 — RISK CATEGORY II EXPOSURE CATEGORY "D"[1, 2]
MINIMUM DESIGN WIND UPLIFT PRESSURES, IN PSF FOR FIELD [$P_{asd}(1)$], PERIMETER [$P_{asd}(2)$] AND CORNER [$P_{asd}(3)$] AREAS OF ROOFS FOR EXPOSURE "D" BUILDINGS

Roof mean height (below)	$P_{asd}(1)$ (Field)	$P_{asd}(2)$ (Perimeter)	$P_{asd}(3)$ (Corners)
20	-51.4	-86.2	-129.7
25	-53.4	-89.5	-134.7
30	-55.0	-92.3	-138.9
35	-56.4	-94.5	-142.3
40	-57.7	-96.8	-145.6

[1] Calculated in accordance with ASCE 7.
[2] $P_{asd} = 0.6P_{ult}$

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TABLE 3 WHERE TO OBTAIN INFORMATION		
Description	Symbol	Where to find
Design Pressure	$P_{rud}(1)$ or $P_{sod}(2)$ or $P_{tsd}(3)$	Table 1 or Table 2, as applicable, or by an engineer analysis prepared, signed and sealed by a professional engineer based on ASCE 7
Mean Roof Height	H	Job Site
Roof Slope	θ	Job Site
Aerodynamic Multiplier	λ	Product Approval
Restoring Moment due to Gravity	M_g	Product Approval
Attachment Resistance	M_f	Product Approval
Required Moment Resistance	M_r	Calculated
Minimum Characteristic Resistance Load	F'	Product Approval
Required Uplift Resistance	F_r	Calculated
Average Tile Weight	W	Product Approval
Tile Dimensions	l=length w=width	Product Approval

All calculations must be submitted to the building official at the time of permitting.

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